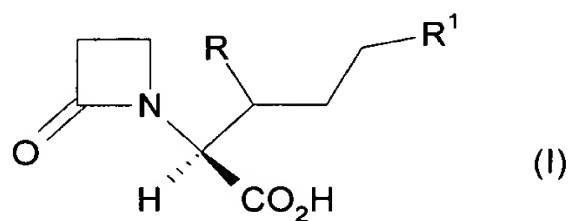


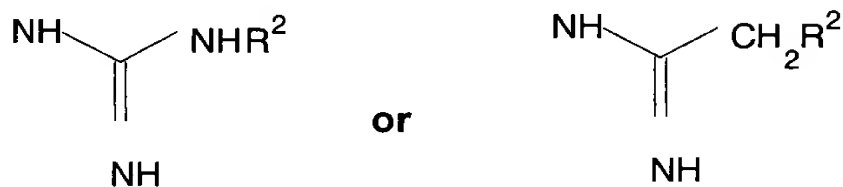
**In the Claims:**

Claims 1-14 (Cancelled)

15. (Currently amended) A process for preparing compounds of formula (I)



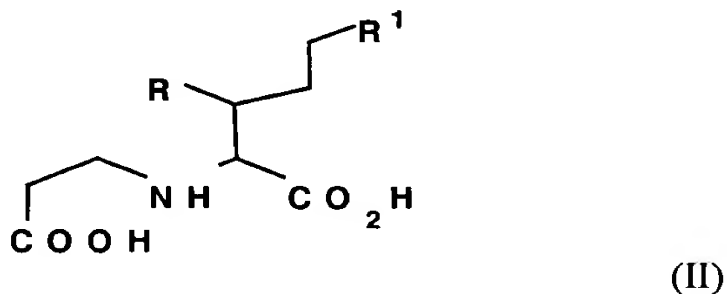
wherein R is H or OH and R<sup>1</sup> is



and where R<sup>2</sup> = H or C<sub>1-6</sub> alkyl

comprising the steps of:

- a) producing an isolated polypeptide, having  $\beta$ -lactam synthetase activity, ~~from a~~ in a host cell using a vector comprising an isolated polynucleotide encoding said polypeptide, wherein the polypeptide comprises a sequence having at least 95% identity to the amino acid sequence of SEQ ID NO:2 over the entire length of SEQ ID NO:2; and
- b) contacting a compound of formula (II)

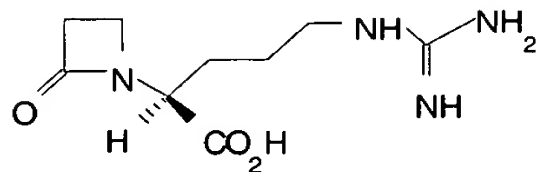


where the variables are as defined in formula (I)

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with said isolated polypeptide.

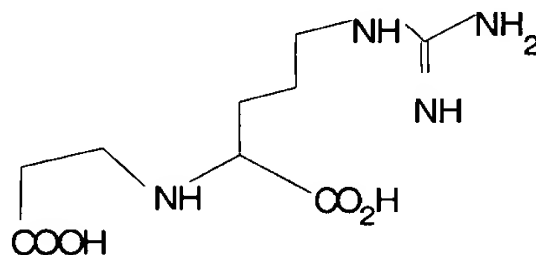
16. (Currently amended) A process for preparing a compound of formula (IV)



(IV)

comprising the steps of:

- producing an isolated polypeptide, having β-lactam synthetase activity, ~~from a~~ in a host cell using a vector comprising an isolated polynucleotide encoding said polypeptide, wherein the polypeptide comprises a sequence having at least 95% identity to the amino acid sequence of SEQ ID NO:2 over the entire length of SEQ ID NO:2; and
- contacting N<sup>2</sup>-(2-carboxyethyl)-(S)-arginine; formula (III)



(III)

with said isolated polypeptide.

17. (Previously presented) A process according to claim 15 or 16 wherein the polypeptide comprises the amino acid sequence of SEQ ID NO:2.
18. (Previously presented) A process according to claim 15 or 16 wherein the polypeptide has the amino acid sequence of SEQ ID NO:2.
19. (Previously presented) A process according to claim 15 or 16 wherein the polypeptide having β-lactam synthetase activity is native to a *Streptomyces* species.
20. (Previously presented) A process according to claim 19 wherein the *Streptomyces* species is *Streptomyces clavuligerus*.

21. (Withdrawn) A recombinant vector comprising a polynucleotide capable of producing the polypeptide defined in claim 15 when said vector is present in a compatible host.
22. (Withdrawn) A recombinant vector according to claim 21 comprising a polynucleotide selected from the group:
- a) a polynucleotide encoding a polypeptide having at least 95% identity with the amino acid sequence of SEQ ID NO:2 over the entire length of SEQ ID NO:2;
  - b) a polynucleotide comprising the polynucleotide sequence of SEQ ID NO:1; or
  - c) a polynucleotide having the polynucleotide sequence of SEQ ID NO:1.
23. (Canceled)
24. (Withdrawn) A host microorganism containing a recombinant vector of claims 21 or 22.
25. (Withdrawn) A host microorganism according to claim 24 which is selected from *Streptomyces*, or *E.coli*.
26. (Withdrawn) A process for preparing an enzyme having  $\beta$ -lactam synthetase activity which comprises the steps:
- a) culturing *Streptomyces clavuligerus*,
  - b) harvesting and lysing the mycelium, and
  - c) isolating a polypeptide having at least 95% identity with the amino acid sequence of SEQ ID NO:2 over the entire length of SEQ ID NO:2, and having  $\beta$ -lactam synthetase activity.
27. (Withdrawn) A process for preparing an enzyme having  $\beta$ -lactam synthetase activity which comprises the steps:
- a) culturing a host microorganism transformed with a recombinant vector according to claims 21 or 22, and
  - b) isolating the polypeptide having at least 95% identity with the amino acid sequence of SEQ ID NO:2 over the entire length of SEQ ID NO:2, and having  $\beta$ -lactam synthetase activity.
28. (Withdrawn) A process for preparing clavulanic acid comprising preparing a compound of formula (IV) in accordance with claim 16 or any claim dependent thereon, and then converting the

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compound of formula (IV) to clavulanic acid by treatment with an enzyme system derived from *Streptomyces clavuligerus*.

29. (Currently Amended) The process of claim 15, wherein said isolated polynucleotide comprises SEQ ID NO:1.

30. (Currently Amended) The process of claim 16, wherein said isolated polynucleotide comprises SEQ ID NO:1.